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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/748,520	12/30/2003	Irene Spitsberg	129968	7282

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EXAMINER

MCNEIL, JENNIFER C

ART UNIT	PAPER NUMBER
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1775

DATE MAILED: 10/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/748,520

Applicant(s)

SPITSBERG ET AL.

Examiner

Jennifer C McNeil

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 3, 13, and 25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 3 refers to yttria at 3-5 mol% and a second oxide at 0.5-4 mol%, which may add up to 9 mol% if the maximum for both is used. This is contradictory to claim 2, from which claim 3 depends, as it sets the upper limit of added oxides at 8 mol%. Also the opposite is true. If the smaller amounts are taken (3 and 0.5 mol%), they do not add up to the minimum required by claim 2 (5 mol%). For the purpose of examination, claim 2 is considered to encompass all the possibilities that are put forth in claim 3. In other words, for examination, the added amount will be considered 3.5-9 mol%.

The same is true for claims 13 and 25.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of

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this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Nakayama (Journal of Materials Science Letters, 1999). Nakayama teaches a composition of zirconia, 2.6 mol% yttria, and up to about 1.5 mol% lanthana (see Figures 1 and 2).

Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Mazdiyasni et al (US 3,525,597). Mazdiyasni teaches a zirconia composition including a mixture of yttria, dysprosia, and ytterbia in an amount of 6 mol%.

Claims 1-5, 8-15, and 18-27 are rejected under 35 U.S.C. 102(b) as being anticipated by Rickerby et al (US 6,025,078). Rickerby teaches a thermal barrier coating on a substrate comprising zirconia, 4-20 wt% yttria, and 5-25 wt% (2-25 mol%) erbia. The erbia may be replaced by dysprosia, europia, gadolinia, neodymia, and ytterbia. The amounts are considered to overlap with the ranges claimed. Regarding claim 9, a bond coat may be present. Regarding claim 11, the coating may be columnar. Regarding claims 10, 19, and 20, the coating may have a thickness of at least 100 microns. Regarding claim 23, the coating may be deposited via PVD.

Claims 1, 8, 9, and 21-23 are rejected under 35 U.S.C. 102(b) as being anticipated by Alperine et al (US 6,333,118). Alperine teaches a ceramic coating comprising zirconia, dysprosia, and may also include ceria. The dysprosia may be added in an amount between 2-30 wt%, and the ceria may be added in an amount of 0-30 mol%. Regarding claims 9 and 22, a bond coat may be present. Regarding claim 23, the coating may be columnar.

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Claims 1-28 are rejected under 35 U.S.C. 102(a) as being anticipated by Rigney et al (US 6,586,115). Rigney teaches a zirconia coating comprising zirconia, 3 wt% yttria, and 5.8-22.5 wt% lanthana. Regarding claims 2 and 3, the amounts of Rigney are considered to overlap with the claimed ranges. Regarding claims 9 and 21, a bond coat may be present. Regarding claims 11 and 23, the coating may be columnar. Regarding the thickness, the coating may be 75-300 microns thick.

Claims 1-28 are rejected under 35 U.S.C. 102(a) as being anticipated by Bruce (US 2003/0224200). Bruce teaches a thermal barrier coating comprising zirconia 1-4 wt% yttria, and 0.1-4 wt% lanthana. These ranges are considered to overlap with the claimed ranges. A bond coat may be provided. The coating may be columnar. The coating may be 75-300 microns thick. The coating may be deposited via PVD.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakayama (1999). As discussed above, Nakayama teaches a composition of zirconia with 2.6 mol% yttria, and up to about 1.5 mol% lanthana. It is the position of the examiner that 2.6 mol% is substantially close to that of the instant expected compositions and compositions with such close proportions to those in prior art are considered to be prima facie obvious, and to have same properties (*Titanium Metals Corp.*, 227 USPQ 773 (CA FC 1985)).

Claims 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mazdidasni et al (US 3,525,597). Mazdidasni teaches a zirconia composition including a mixture of yttria, dysprosia, and ytterbia in an amount of 6 mol%. Mazdidasni does not specifically teach what proportions of the materials are added to form the mixture. One of ordinary skill in the art at the time of the invention would have found it obvious to add the yttria, dysprosia, and ytterbia in varying amounts that would add up to 6 mol%.

Claims 1, 8, 9, and 21-23 are rejected under 35 U.S.C. 103(a) as being obvious over Litton et al (US 6,730,422). Litton teaches a thermal barrier coating comprising a first oxide of zirconia, a second oxide of lanthana or samaria, and a third oxide that may include yttria (see col. 5, lines 24-33). The lanthana may be present at 5-60 mol%, and the yttria may be present at 5-60 mol%. It is the position of the examiner that 10 mol% is substantially close to that of the instant expected compositions, and compositions with such close proportions to those in prior art are considered to be prima facie obvious, and to have same properties (*Titanium Metals Corp.*, 227 USPQ 773 (CA FC 1985)).

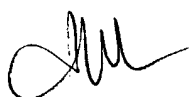
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer C McNeil whose telephone number is 571-272-1540. The examiner can normally be reached on 9AM-6PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones can be reached on 571-272-1535. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jennifer McNeil
Primary Examiner